



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
Fax 613 632-5246

D5806-5

Job Sheet 207477



Part No: D5806-5

Job Qty: 4 pcs

Part Name: Spine



Part Weight: 0 lbs

Job Created: 2/26/20

Due Date: 3/27/20

Type: Stock

Note: URF 20-522 DWG 5806 REV.A IPP REV:A NEW ISSUE 20.31.01 JV VERF:DD

Ship Via:

POSITIVE RECALL

EFFECTIVE 2/27/13 AUTH SAG

RELEASED DATE

Status: New

Priority: Medium

Job Tracking No:

Created By: Jennifer Renwick

Description:

POSITIVE  
RECALL

## Bill of Materials

## Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard	Workcenter/Supplier		Sign-off
					Setup Run Hrs Hrs	Workcenter / Supplier	Lead Time	
100	Large Fab - Basket - 1	4 pcs	3/27/20		0.00 0.27	Large Fab - 1		
						Large Fab - 10		
						Large Fab - 2		
						Large Fab - 3		
						Large Fab - 4		
						Large Fab - 5		
						Large Fab - 6		
						Large Fab - 7		
						Large Fab - 8		
						Large Fab - 9		
						Large Fab - 11 (Various)		MAC
						Large Fab - 12		
110	QC 5	4 pcs	3/27/20		0.00 0.00	QC 5 - 10		
						QC 5 - 12		
						QC 5 - 17		
						QC 5 - 18		
						QC 5 - 19		
						QC 5 - 22		
						QC 5 - 24		
						QC 5 - 3		
						QC 5 - 43		
						QC 5 - 49		
						QC 5 - 51		
						QC 5 - 58		
						QC 5 - 68		
						QC 5 - 9		
						QC 5 - 50		
						QC 5 - 30		
						QC 5 - 40		
						QC 5 - 61		
						QC 5 - 81		



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
CANADA  
TEL: 1 613 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

Container No: S264070



Part: D5806-5

Job No: 207477

Serial No/Batch: S264070

Revision: REV.A

Inspector:

Exp Date:

Instructions:

Date: 03/17/20

DAS

MAR 17 2020 40  
9-89

Flex 3/11/20 3:51 PM Dart, Renwick, Jennifer

3/11/2020

[Dart Hawkesbury] Job Sheet - Renwick, Jennifer

120 Packaging 3-1 - Stock - B4B 4 pcs

3/27/20

0.00 0.00

Packaging 3 - 1 - B4B

Packaging 3 - 2 - B4B

Packaging 3 - 3 - B4B

Packaging 3 - 4 - B4B

Packaging 3 - 5 - B4B

Packaging 3 - 6 - B4B

Packaging 3 - 7 - B4B

Packaging 3 - 8 - B4B

Packaging 3 - 9 - B4B

Packaging 3 - 10 - B4B

Packaging 3 - 11 - B4B

Packaging 3 - 12 - B4B

Packaging 3 - 13 - B4B

Packaging 3 - 14 - B4B

Packaging 3 - 15 - B4B

Packaging 3 - 16 - B4B

Packaging 3 - 17 - B4B

Packaging 3 - 18 - B4B

Packaging 3 - 19 - B4B

Packaging 3 - 20 - B4B

Packaging 3 - 21 - B4B

Packaging 3 - 22 - B4B

Packaging 3 - 23 - B4B

Packaging 3 - 24 - B4B

Packaging 3 - 25 - B4B

Packaging 3 - 26 - B4B

Packaging 3 - 27 - B4B

Packaging 3 - 28 - B4B

Packaging 3 - 29 - B4B

Packaging 3 - 30 - B4B

Packaging 3 - 31 - B4B

Packaging 3 - 32 - B4B

Packaging 3 - 33 - B4B

Packaging 3 - 34 - B4B

Packaging 3 - 35 - B4B

Packaging 3 - 36 - B4B

Packaging 3 - 37 - B4B

130 QC 21 - SA

4 pcs

3/27/20

0.00 0.00

QC 21 - SA - 21

QC 21 - SA - 70

QC 21 - SA - 53

MAR 17 2020

Part Op 100 - 1- Cut as per dwg 2- Deburr

Descriptions: 110 - QC5- Inspect part completeness to step on W/O

120 - Identify as per dwg & Stock Location: *MA-004*

130 - QC21- Final Inspection - Work Order Release

## Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M4130NTS0.500W.035	4130 Square Tube .500 X .500 X .035W	6.0332 ft (1.5083 ea)	100-Large Fab - Basket - 1	<i>5260577</i>

## Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Large Fab - Basket - 1	M4130NTS0.500W.035	6	577	0

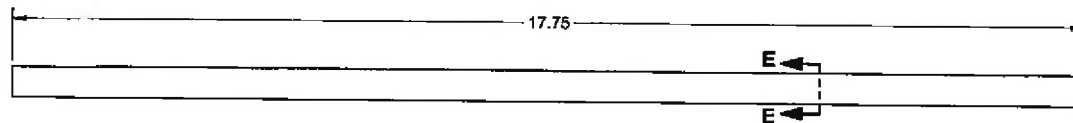
## Part Specifications

Specifications could not be found.

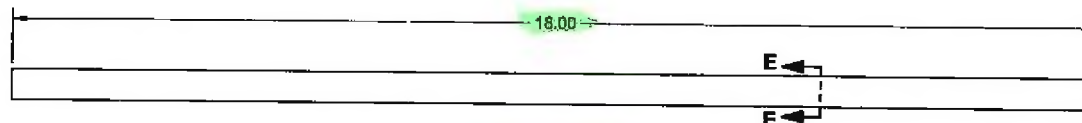
Plex 3/11/20 3:51 PM Dart.Renwick.Jennifer



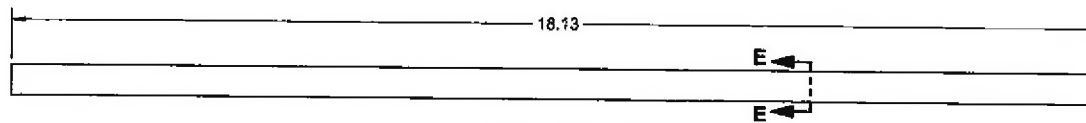
8 7 6 5 4 3 2 1



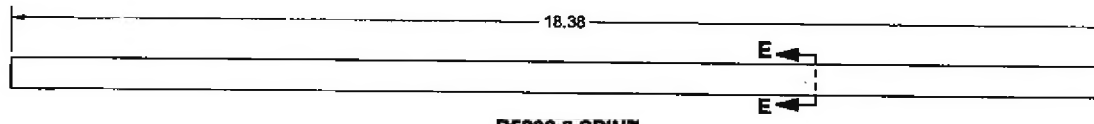
**D5806-3 SPINE**



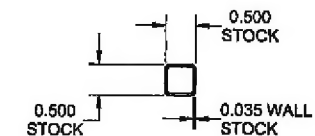
**D5806-5 SPINE**



**D5806-7 SPINE**



**D5806-9 SPINE**



**SECTION E-E**

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 207477

UNDER REVIEW

URF 2020.522 20.02.14 (NO)

**NOTES:**

- 1) MATERIAL: AISI 4130N STEEL SQUARE TUBING, 1/2 X 0.035 WALL  
PER MIL-T-8736 OR AMS 6371/6360/6361/6362/6373/6374  
REF DART SPEC M4130N-TS0.500W.035
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: -3: 0.31 lbs  
-6: 0.32 lbs  
-7: 0.32 lbs  
-8: 0.31 lbs

**RELEASED**  
2020 FEB 18 NO

APPROVED



DESIGN	ZF	<b>DART AEROSPACE LTD</b>	
DRAWN	ZF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	DRAWING NO.	REV. A
MFG. APPR.	DD	<b>D5806</b>	SHEET 6 OF 7
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	<b>MEDIUM BASKET BODY</b>	NTS
DATE	20.01.17	<small>COPYRIGHT © 2020 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1



2/19/2020

## PURCHASE ORDER

		Dart Aerospace Ltd. 1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada  Tel (613) 632-5200		<b>PURCHASE ORDER</b> <b>POHB045883</b> 	
<b>Supplier:</b> FAC001-YU Factory Steel 14020 Oakland Ave. Detroit, MI 48203 USA Phone: 313 883 6300 Fax: 313 883 4883		<b>PO No:</b> POHB045883 <b>PO Date:</b> 2/18/20 <b>Due Date:</b> 2/28/20 <b>Purchase Order</b> <b>Revision:</b> <b>Revision Date:</b> FEB 19 2020 <b>Issued By:</b> Laviole, Chantal Phone: 613-632-5200 Ext: 242 Fax: 613-632-1053 clavoile@dartaero.com		<b>Ship To:</b> 1270 Aberdeen Street Hawkesbury ON K6A 1K7 Canada Phone: 613-632-5200	
		<b>Via:</b> Ground <b>Print Terms:</b> Net 30 <b>Freight Terms:</b> <b>Special Comments:</b>			

Items														
Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price	
1		M4130NTS0.500W.035			4130 Square Tube 500 X .500 X .035W MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6738 OR AMS 6371/6380/6361/6362 6373/6374 receive ft	Firmed		2/28/20	600 ft	0 ft	600 ft	\$6.49/ft	\$3,894.00	
													Grand Total:	\$3,894.00

Order Notes	
Procurement Quality Clauses A005 right of entry A012 chemical and physical test report A016 personnel qualification A017 raw material identification (as applicable). No Raw Metals from China or Soviet Bloc Countries. (DFARS) A028 certification of material conformance A041 quality management system A042 dart notification by supplier A043 retention of quality documents  A048 counterfeit parts avoidance, detection, mitigation and disposition program.  A049 supplier awareness.  Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit <a href="http://www.dartaerospace.com">www.dartaerospace.com</a> for further explanation.	

Plex 2/19/20 2:52 PM Dart.Laviole,Chantal

# PACKING LIST

No. 67811

PG 1 OF 1

FACTORY STEEL & METAL SUPPLY  
14020 OAKLAND AVENUE  
DETROIT, MI 48203

(313)883-6300 PHONE  
(313)883-4883 FAX

SOLD TO  
DART AEROSPACE  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7

CUSTOMER PO  
POH8045883  
CUSTOMER JOB

SALES ORDER 60752  
ORDER DATE 02/19/2020

SHIP TO  
DART AEROSPACE  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7

BUYER  
CHANTEL LAVOIE  
Tel (613) 632-3336  
Fax (613) 632-4443

SALES REP  
MICK HALON

SHIP INST  
CALL WHEN READY  
PRO#

TERMS  
NET 30 DAYS

SHIP DATE  
02/21/2020

SHIP VIA  
\*\*\*\*TRUCK\*\*\*\*

RESALE #  
59-2958719

CARRIER  
TRUCK

BLIND Y/N  
N

FOB  
DETROIT

LINE	QUANTITY	DESCRIPTION	WIDTH	LENGTH	WEIGHT		
1	611.667 FT	PACK IN CARDBOARD TUBE 4130N CD SWLSS SQ TUBE 1/2" X .035W NIT-6736 Tag M11 Ref # Heat 154506 023914 25537 MTRS (CIRCLE) FAX SHIPMENT INVOICE ALL DATE: INITIAL:	27	21'24" RL	135.361		
TOTAL WT							
135 LBS							
RECEIVED BY: SIGNATURE			RECEIVED BY: PRINTED NAME			DATE RECEIVED	

61151

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130 NT 50.500 W.035 PO / BATCH NO.: P040045803  
 DATE: MAR 04 2020 5260577

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 611 FT  
 QUANTITY INSPECTED: 611 FT  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .500 X .500 W.035  
 THICKNESS RECEIVED: .500 X .520 W.035  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	MIL-T-6736
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	HIT 23537
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF.	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>—</u>	DATE: <u>MAR 04 2020</u>	SIGNED OFF BY: <u>—</u>	DATE: <u>—</u>

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

LIME1

M4130NTS0.500W.035

10413045883



DESIGN DH	DRAWN BY DH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. M4130N-TS	REV. A SHEET 1 OF 1
DATE 05.02.09		TITLE 4130N SQUARE TUBING	SCALE NTS
A	05.02.09	NEW ISSUE	

PURCHASE MATERIAL:

AISI 4130N STEEL SQUARE TUBING PER ONE OF  
THE FOLLOWING SPEC'S: MIL-T-6736, AMS 6371,  
6360, 6361, 6362, 6373 OR 6374

PART NUMBER:

M4130N-TS | A.AAA | W | .TTT |

DAS  
[Signature]

WHERE A.AAA = WIDTH IN INCHES  
TTT = WALL THICKNESS IN INCHES

EXAMPLE: 0.50" X 0.035" WALL = M4130N-TS0.500W.035

05.03.08 [Signature]

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# PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS  
 175557 - 1 / 0

WORK ORDER 023914 PCS/HEAT 0  
 HEAT NUMBER 25537  
 MELT SOURCE Finnan Steel - Melt/Mfg. USA

SHP TO

Factory Steel & Metal Supply C  
 14020 Oakland Avenue  
 Detroit, MI 48203  
 USA

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE								
3999	SQ-N12035												
<b>PART DESCRIPTION</b> SHSQ0500035J200 ----- Square OD ----- Side1: 0.5000 Max:0.5100 Min:0.4900 Side2: 0.5000 Max:0.5100 Min:0.4900 Wall: 0.0350 Max:0.0380 Min:0.0320 Length: 15.00/25.00 Spec: (MIL-7 8736B) Seamless Aircraft Grade: 430 Anneal: Cond N													
<b>CERTIFICATION REQUIREMENTS</b> FAR BAA (FAR 52.225-1 Buy America Act Supplies), DFARS 252.225-7001 Buy America Act & Bal. of Payments Program FAR TAA (FAR 52.225-5 Trade Agreements) and/or FAR 25.201-1 Buy American Act. This material was inspected by the raw material supplier in accordance to the requirements of ASTM A-450. The Grain size is determined and reported by the raw material supplier in accordance to ASTM E-112. This raw material was magnetic particle inspected by the raw material supplier in accordance to AMS 2840J and/or ASTM E-1444, and rated as Frequency and Severity to AMS 2301, latest revision. Yield is determined by using the 0.2% offset method. Additional Specifications - AMS-T 6736B, 6360P & 6371L. Material produced in accordance to ASTM A-819-17. Jominy results: J(5/16")=38 J(8/16")=31.													
<b>Chemical Analysis</b>													
C	Mn	P	S	Si	Al	Cr	Mo	Ni	Fe	Cu	V	Ti	Sn
.30	.56	.008	.005	.29	.025	1.02	.20	.13	.000	.18	.009	.003	.009
<b>Physical Properties</b>													
Freq.	Severity	Grain Size											
.000	.000	7											
<b>Mechanical Properties</b>													
<b>TEST</b>	<b>UNITS</b>	<b>#TESTS</b>	<b>HIGH</b>	<b>LOW</b>	<b>AVERAGE</b>	<b>STD-DEV</b>							
Tensile	Psi	6	121110	115340	118173	2536							
Yield	Psi	6	115370	109700	112525	2436							
Elongation	%	6	17	17	17	0							
Rockwell C	Rc	6	22	22	22	0							
<b>TEST</b>	<b>RESULT</b>												
Decarb/OD	Pass												
Total ID/OD decarb	Pass												

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Streator in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube.

*[Signature]*  
 Quality Assurance



2300 E. 12th Street, Detroit, MI 48203  
Phone: (313) 675-1545 Fax: (313) 622-7345

PLEASE YOUR SOURCE AGENT NO SUBSTITUTIONS

# PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

179367~1 / 0

WORK ORDER 09094

PCS/HEAT 0

HEAT NUMBER 25537

MELT SOURCE Tirken Steel - Melt/Mfg. USA

SHIP TO

Factory Steel & Metal Supply C  
14020 Oakland Avenue  
Detroit, MI 48203  
USA

CUSTOMER P.O. 3999	CUSTOMER PART SQ-N12035	QUANTITY	LOADING NO	CERT ID / REV /	CERT DATE
PART DESCRIPTION SHSQ0600035J200					
<u>Additional Specification(s)</u>					
<u>TEST</u> Brinell	<u>UNITS</u> Brinell	<u>#TESTS</u> 5	<u>HIGH</u> 251	<u>LOW</u> 197	<u>AVERAGE</u> 225
					<u>STD-DEV</u> 27
<p>This test report data is for the heat Chemistry Stated above.</p> <p>The material in this test report is:</p> <ol style="list-style-type: none"> <li>1) Drawn in the USA</li> <li>2) Free from Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE), and Mercury contamination.</li> <li>3) NAFTA compliant.</li> </ol> <p style="text-align: right;">End of Certification</p>					

DAS  
9-29

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Stretator in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube.

*Janice Derossio*  
Quality Assurance

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

Job: _____  Part No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	<b>DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Water Jet <input type="checkbox"/>            Supplier <input type="checkbox"/>            Quality <input type="checkbox"/> </div> </div>			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
<b>Description Work Order Deviation</b>		<b>Disposition</b>		<b>Completed By</b>	
				<b>Lead hand / Supervisor</b>	
				<b>QC / QA Coordinator</b>	
<b>Root Cause</b>  <div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div>		<b>FAULT CATEGORY</b>  <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced  <input type="checkbox"/> Bending  <input type="checkbox"/> Crushing  <input type="checkbox"/> Cracks  <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist  <input type="checkbox"/> Marks/Chatter  <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination  <input type="checkbox"/> Misaligned/off center  <input type="checkbox"/> BOM/Route  <input type="checkbox"/> Broken/Damage/Defect  <input type="checkbox"/> Incomplete/Unclear Instructions  <input type="checkbox"/> Drill Holes  <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Folio/Program  <input type="checkbox"/> Grain Direction  <input type="checkbox"/> Weld  <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Out of Sequence  <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong  <input type="checkbox"/> Outside Tolerance  <input type="checkbox"/> Drawing  <input type="checkbox"/> Finish  <input type="checkbox"/> Part Lost/Missing  <input type="checkbox"/> Misread         </div> </div>			
Other/Details:					